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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/027,876 | 12/21/2001 | Kristian Miller | SUN-P3434COB | 1011 |

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| EXAMINER | |
|---|---|
| JONES, HUGH M | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2128 | |

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/027,876 | MILLER ET AL. | |
| | Examiner | Art Unit | |
| | Hugh Jones | 2128 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *17 June 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

1. Claims 1-9 of U. S. Application 10/027,876, filed 12/21/2001, which is a continuation of 09/573,042 (ABN), and a continuation of 09/274,742 (ABN).

### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 7-9 are rejected under 35 U.S.C. 101 because **the claims recite a *computer program* product.** It should be noted that code (i.e., a computer software program) does not do anything per se. Instead, it is the code stored on a computer that, *when executed*, instructs the computer to perform various functions. The following claim is a generic example of a proper computer program product claim;

> A computer program product embodied on a computer-readable medium and comprising code that, when executed, causes a computer to perform the following:
>
> Function A
>
> Function B
>
> Function C, etc...

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

5. A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by **[Wu – record in the parent appliaction]** or **[Fujii – of record in the parent application]**.

7. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by **[Linsker – of record in the parent application]**.

8. Applicant is disclosing IC rerouting of victim lines (said lines susceptible to EMI) to "quieter" track locations; further limitations disclose a relative ranking of the "sensitivity" of the victim lines, a relative ranking of candidate locations for the rerouting and finally, a priority for rerouting said lines based on the relative rankings. In other words, applicant is carrying out constraint based routing using design rule checks.

9. Wu discloses a system and method for multi-constraint domain electronic system design mapping. Wu discloses optimization (inherent disclosure of iteration and ranking) of routing based on various criterion including EMI (electromagnetic interference) - see col. 1, lines 28-45; col. 2, lines 4-9; col. 3, lines 5-17; col. 14, lines 30-60; col. 7, lines 1-19; col. 8, lines 10-45; col. 11, line 57 to col. 12, line 44; col. 13, lines 11-23. Especially note col. 7, lines 1-19, wherein EMI, DRCs and routing are discussed.

10. Fujii discloses: "Interconnection routing method for reducing crosstalk between interconnections". See: abstract; fig. 2-3 (evaluate routing based on crosstalk), fig. 4 (track assignment), fig. 6 (track reassignment), fig. 8, fig. 10; col. 1, line 7 to col. 3, line 48 (details concerning automated process for rerouting based on detected crosstalk, permutation).

11. Linsker discloses an iterative method for routing. See: abstract; fig. 4-6 (# 116 - penalty function, figures disclose rerouting based on a criterion); col. 1, lines 7-16 (rerouting); col. 2 (rerouting and penalty functions); col. 3, lines 1-24 (routing, penalty function and crosstalk); col. 6, lines 46-68 (priority); col. 7, lines 34-68 (rerouting); col. 11, lines 22-40 (rerouting and crosstalk).

## ***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haung (of record in the parent application) in view of comments regarding official notice. Haung discloses modeling and estimating crosstalk noise and detecting false logic. See: fig. 1 (System), fig. 2 (# 208 - crosstalk analysis, # 212

- rerouting if threshold of crosstalk violation is met), fig. 13 (# 1304 - screening [essentially a "ranking"], # 1308 - identify aggressor nets, # 1314 - design rule check based on crosstalk); col. 1, line 6 to col. 2, line 34 (details concerning crosstalk, routing, rerouting, threshold (essentially a ranking)); col. 5, lines 18-57 (details concerning the iterative rerouting); col. 12, lines 6-18 (discussion of one of ordinary skill in the art as per crosstalk and victim and aggressor nets); col. 14, lines 13-33 (details concerning the screening - this is essentially a ranking). Haung does not explicitly disclose a relative ranking of the "sensitivity" of the victim lines, a relative ranking of candidate locations for the rerouting and finally, a priority for rerouting said lines based on the relative rankings. However, official notice is taken that one of ordinary skill in the art at the time of the invention would appreciate indentifying the worst victim nets or lines and reroute them to the "quietest" place before dealing with other instances of crosstalk which are not as critical. In any case, this feature appears to be inherent in the disclosure of Haung as per "thresholds" and "screening".

## ***Response to Arguments***

14. Applicant's arguments filed 6/17/2002 have been fully considered but they are not persuasive.

15. Applicants appear to argue the rejections from the parent application, which has been abandoned. Applicant's arguments are abstract and conclusary and are not supported by evidence. See MPEP 2145 [R-2]:

> "I. ARGUMENT DOES NOT REPLACE EVIDENCE WHERE EVIDENCE IS NECESSARY
> Attorney argument is not evidence unless it is an admission, in which case, an examiner may use the admission in making a rejection. See MPEP § 2129 and § 2144.03 for a discussion of admissions as prior art. The arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) ("An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a prima facie case of obviousness."). See MPEP § 716.01(c) for examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration."

16. In any case, such arguments are moot, in view of the prior art rejections.

***Conclusion***

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Carlson et al. disclose a method for analyzing signal noise caused by cross-coupling between an attacker signal line, upon which an attacker signal resides, and a victim signal line, upon which a victim signal resides. This method comprises selecting the victim signal, selecting the attacker signal, performing cross-talk attacker filtering on a plurality of signal lines to identify a first set of potential attacker signals on a first set of potential attacker signal lines that cause signal noise upon said victim signal, performing safety window filtering on a

plurality of signals signal lines to identify a second set of potential attacker signals on a second set of potential attacker signal lines that cause signal noise upon the victim signal line, and reducing the effects of the signal noise on at least one of the victim signal lines.

18. **Any inquiry concerning this communication or earlier communications from the examiner should be:**

**directed to:** Dr. Hugh Jones telephone number (703) 305-0023, Monday-Thursday 0830 to 0700 ET, ***or*** the examiner's supervisor, Kevin Teska, telephone number (703) 305-9704. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, telephone number (703) 305-3900.

**mailed to:** Commissioner of Patents and Trademarks
Washington, D.C. 20231

**or faxed to:** (703) 308-9051 (for formal communications intended for entry) ***or***
(703) 308-1396 (for informal or draft communications, please label "*PROPOSED*" or "*DRAFT*").

Dr. Hugh Jones

Primary Patent Examiner

September 5, 2004

HUGH JONES Ph.D.
PRIMARY PATENT EXAMINER
TECHNOLOGY CENTER 2100